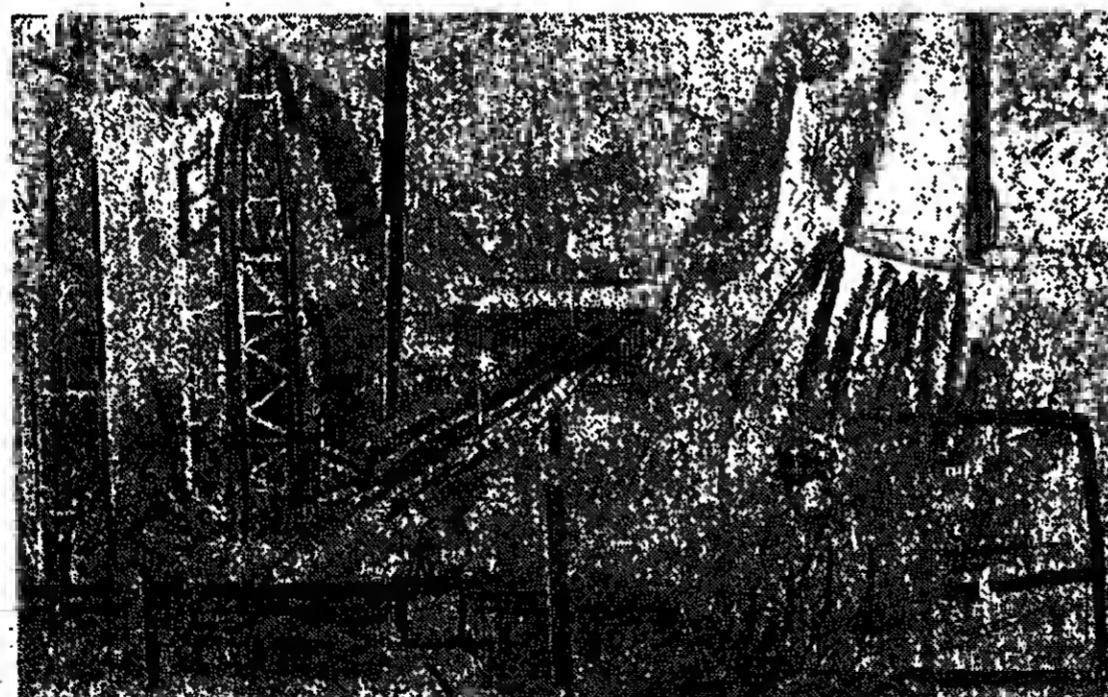


Romania is today an immense building site, seeing the release of huge energies which have revealed the constructive vocation of the Romanian people, its excellent capacity. This vocation is materialized in foundations meant to last years and years, expressions of the clear-knif forces of the whole nation under the banner of the same ideals. The people's work, the capitalization of its creative potential have brought about big changes in the country's landscape, the erection of buildings which have modified the geography of the country in the name of her flourishing future. These changes and processes have shaped up new people and personalities, talents have asserted themselves, the scientific, technical and artistic creative genius of the Romanian nation. These realities have been rich sources of inspiration for the artists, on enormous treasure of thought and deed in which the existing works have led. Works aspiring after synthesis-

ing in memorable artistic images the life and work of the Romanian people. The achievements of these years, are for the Romanian painters, sculptors and graphic artists a way of continuously discovering a clear thinking and an ever-renewed sensitivity. The faces of those who have contributed to achieving these objectives, as well as their significant appearances become virtual generic portraits, real emotional documents of Romanian contemporary history.

PAUL ANTIM ■

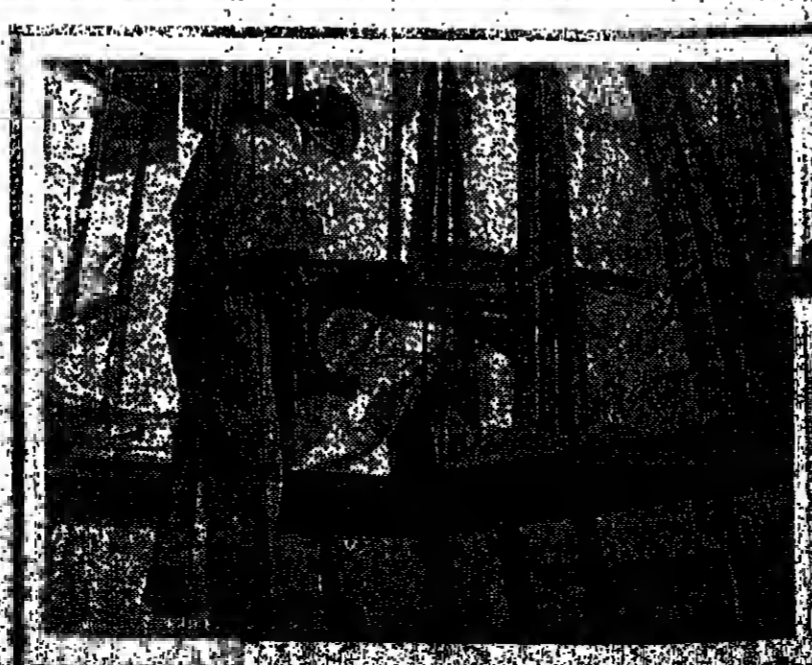
Our photos represent: "Oileasa Shipyard" by Vladimir Setran (top left), "The Bridge at Vadul Oit" by Al. Clucureanu (top right), "Building Site" by Gavril Mikhosy (center), "On the Building Site of the Danube-Black Sea Canal" (center, right), "Ship Builders" by Vladimir Setran (bottom left), "Constructors" by Sorin Chitulescu (bottom, right)



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A CONTINUOUSLY ASCENDING COURSE COMMUNIQUE ON THE FULFILMENT OF THE 1987 PLAN

The Executive Political Committee of the CC of the RCP met on Wednesday, February 3, 1988, under the chairmanship of Nicolae Ceausescu, General Secretary of the Romanian Communist Party. It examined and approved the Communiqué on the fulfillment of the 1987 Plan.

As regards the investment-construction activity, we should mention the fact that last year several projects of national importance were commissioned, such as the rail and road complex of Danubian bridges at Petrila — Cernavoda, the new shipping canal Ploesti-Alba —



ROBOTS IN THEIR MATURE YEARS

The intensive character of the development of Romanian industry during the ongoing stage requires a large-scale introduction of automation, robotization and cybernetics. The programmes existing in this field illustrate both the results obtained so far and the remarkable prospects for development in the near future. The reportage on page 1, highlights a series of preoccupations in the field of industrial robotics, the present stage and the guidelines of applied and fundamental research.



lional Plan of Romania's Socio-Economic Development in 1987, which was later released to the press.

The Executive Political Committee appreciates that in 1987, new and important achievements were scored in the country's socio-economic development. Production forces developed continuously and Romania's economic potential was strengthened. Industry registered new progress on the way to the modernization, to its intensive development, to increasing product competitiveness in the international market. According to the communiqué, the value of the marketable industrial production was in 1987, 4.5 percent bigger than in 1986, while the net industrial production 5.5 percent bigger. The whole production increase was obtained through the increase by 4.8 percent of labour productivity.

In agriculture, although weather conditions were not too favourable, good results were obtained. In this context, mention should be made of the fact that in 1987 the largest wheat production in the country's history was obtained. The value of the overall agricultural output grew by 3.3 percent while the value of the net agricultural output by 3 percent as compared to the previous year.

The activity of scientific research, technological development and introduction of technical progress made a substantial contribution to ensuring the intensive economic growth, enhancing labour productivity and economic efficiency. In 1987, over 2,500 new and improved types of machine apparatus and installations, and 1,000 materials and consumer goods were designed, produced and 1,715 new improved technologies were introduced.

HOW DOES ONE LEARN TO PRACTICE AGRICULTURE

According to a ruler issued in September 1981 the aim of the Agronomic Institute in Bucharest was "to provide superior training in the field of agronomical sciences and to contribute to the settlement of problems concerning the country's agriculture". The aim is still the same today. But the present conditions of the Romanian agricultural higher education of the students are altogether different. On page 5 the Institute and some results scored by researchers working there are set forth.



**THE MYSTERIES
OF AN ANCIENT CITY**
(PAGE 11)

**MODERNITY
AND TRADITION**
(PAGE 7)

ROBOTS IN THEIR MATURE YEARS

Nowhere in the world has anyone yet created completely self-contained robots. Their enticing presence is now a subject highly speculated on by science fiction literature and movies. However they have anticipated the advent of real industrial robots endowed with ascending levels of capability, able to substitute for the physical effort, the monotonous work of scores of people. To use them means to improve vi-

sibly the accuracy, quality and productivity of work. The intensive character of the development of Romanian industry during the ongoing stage requires the wide-scale introduction of automation, robotization and cybernation. The programmes adopted to this end illustrate both the achievements scored so far and the extraordinary prospects for development in the near future.

DAILY IMAGES

At the 87th International Exhibition in Montreal, Canada, the Romanian delegation displayed two flexible robots, the R1P 0.3, as part of applications of

blowers. Automatica offered one of the robots which have already been assembled - R1P 0.3. But, naturally, redesigned for the new tasks, bearing of words,

engineer Dan Cosmin however admitted the existence of a degree of uniqueness in every line and every movement. It can be said that thanks to the intensive demands for modernization made by many enterprises, automation has become part and parcel of the daily activity of the Automatica specialists.



continuous welding. The exhibits aroused the interest of specialists of home and foreign partners. As a matter of fact Automatica helped INU Buzau to mount a flexible line manufacturing drums for the MEQU firm in Leipzig. One year after full operation proved to the beneficiaries that the Romanian flexible line managed to meet all requirements.

On a January morning I had the opportunity to watch the tests undergone at Automatica by a new flexible line designed for the electrochemical industry: a new modular system mounting electrochemical plants. Completed with other modules, the equipment can be used to mount other electrochemical plants. For the time being the new line mounts one plug in 60 seconds but it was told that it can perform the operation in less than three seconds. Made up of three cells, the robot fills a relatively small space, replacing a whole assembly line. During the tests several specialists and workers of the enterprise stood by the line. The few corrections were made to the operation. No one moved a finger. The program was finally set up. All it took was a push button. The robot moves succeeded each other with perfect accuracy.

On another day I witnessed a discussion between engineer Dan Cosmin and a delegation from the Microelectronics enterprise of Brasov, which selected a robot able to mount turbo-

The modernization of technologies and the boosting of labour productivity is especially possible today thanks to the application of industrial robots in the production process. On this page, engineer Dan Cosmin, from the Automatica enterprise, explains the possibilities of the R1P 0.3 robot.



MEETING THE FUTURE

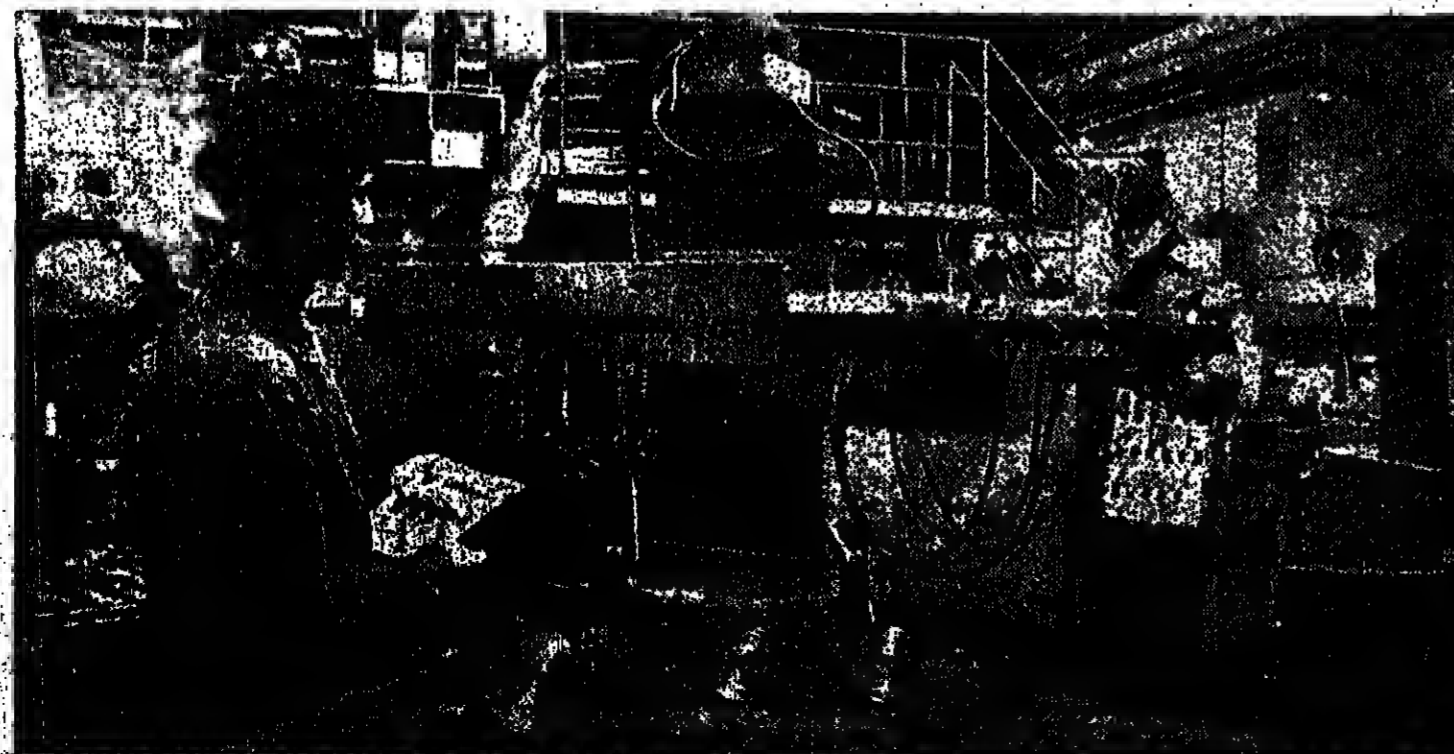
I looked for detailed information concerning the qualification of technical staff working in this fascinating field at the Polytechnic Institute of Bucharest. The most daring researches are carried out at the Automation Faculty the first to have introduced a course on control systems for industrial robots, years ago. The research coordinator, Teodor Boranin, told us about the recent achievements of the teaching staff in the field of industrial robotics.

"In the beginning, I'd like to mention our preoccupations in the educational field. The didactic micro-robot R1P 0.3 with six degrees of freedom, equipped with a control system based on a microcomputer, manufac-

ed with parts integrally made in Romania is accessible from the point of view of cost and offers numerous facilities as its languages can be programmed at a high degree. This robot has another advantage - it needs a personal computer also made in the country - IIC 85. The micro-robot can be used for educational purposes in schools and high schools, technical education institutes, and also in training the technical staff in charge with robotics implementation in industry." Our interlocutor referred to on ample actions of preparing the technical personnel in Bucharest enterprises, a training programme sponsored by the Automation Faculty. Ion Dumitrescu, the dean of the Automation Faculty, told us about the fundamental research in the field of industrial robotics. "We are preoccupied especially by achieving advanced control systems for industrial robots, introducing robots in flexible lines and cells by the achievement of control strategies for robots equipped with a certain degree of intelligence like the spatial-temporal orientation in a given work environment."

We should also add that the important results scored until now are a guarantee of official action to be taken in future. Robots are a reality of Romanian industry.

MARILENA TUTILA



HOW DOES ONE LEARN TO PRACTICE AGRICULTURE?

Four lines of wheat and two of soy beans with harvest increments of 15-16 per cent have been obtained over the last years by teams of researchers of the Agronomic Institute in Bucharest. Besides university staff, these teams included also many students.

Upon the foundation of this institute the Regulations issued by the Ministerial Order no 442

thence proposed for study is made by student scientific circles. The Agronomic Institute in Bucharest comprises 60 much offices equipping more than 1,000 students. Researches are carried out for instance to the effect of combining the optimum combination of floor and doses of chemical fertilizers as well as the periods of application for harvesting the largest possible cereal crops.



of September 15, 1971, stipulated that "the aim of the school of Horticulture is to provide higher training in the field of agricultural sciences and to contribute to the settlement of questions concerning the country's agriculture".

Agronomic students continue to observe this basic requirement.

For the 1987-1988 academic year the Institute has entered almost 200 research contracts worth 25 million lei. An important contribution to solving the

the improvement of rates obtained per hectare through a more efficient rotation of crops, drugs are also being checked while potentially new ones are actually worked out here: greenhouses, ornamental plants are multiplied through crops, etc. Mention should be made of the fact that the Bucharest Institute offers its students excellent conditions for study, research, and, in general, for a wonderful student life.

Situated in one of the oldest areas of the city, the Institute is an authentic university

centre. Modern buildings furnished with all possible equipment and facilities comprise 170 lecture rooms and laboratories. The same portmoteur includes six halls housing 1,700 of the 1,850 students of the Institute. Also here there are canteens, a stadium, a student club, a multi-purpose hall. The library contains a stock of specialist books amounting to half a million copies. More than 70 per cent of the students benefit from state scholarships.

One of the "emallies" which also also define the conditions of the Romanian agronomic education is the Didactic Experimental Station of Bologanalea, 3,000 ha of field, a mechanical station provided with all necessary farming equipment, an animal farm growing 800 cattle, 200 saddle and cart horses, 3,000 sheep, 3,000 chickens, 3,500 pigs. Therefore, Bologanalea is a complete microcosm of agricultural laboratory.

GIL SERRAN



A SHEEP IN SIX COLOURS

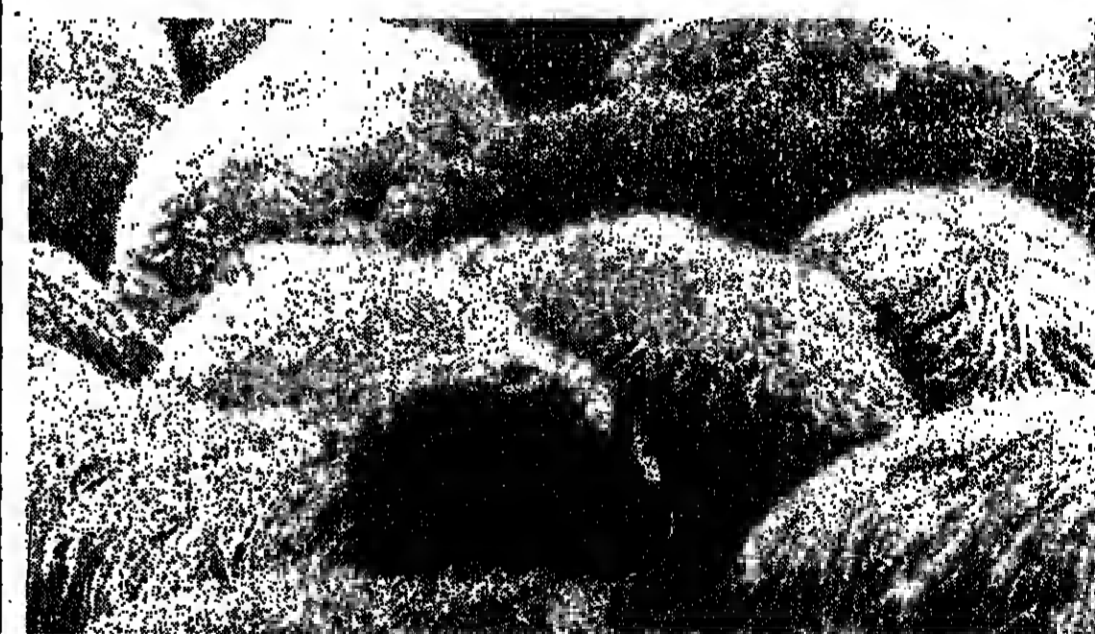
The experts of the Popăuți Research and Production Station in Harghita county have developed, stabilized and multiplied a new Caracul-type sheep breed. The value of this breed consists in the beauty of the newborn lambs. Apart from the classic black and light grey, four other colour variants have been obtained at Popăuți: brown, dark grey, pink and white.

The Caracul of Harghita county is a prestigious presence at the major fairs and auctions. They are distinguished by the strength of the chromosome

pigments, the elasticity, tightness and uniformity of the curl, their velvety touch and gloss.

With an initial number of 700,000 head, Romania is the second largest producer of Caracul skins in Europe after the USSR. In fact the earliest systematic concerns with certifying and insuring this breed were recorded in Romania, probably at the end of last century. In 1970 sheep and rams were brought again from Bukhara. Caracul rams were for the first time crossed with sheep from the local Turean breed at the Popăuți research station in the north of Moldavia. The last

Consequently, over the last 10 years the livestock of the station has grown from 3,000 to 13,000 head, which has also helped on the multiplication process. From both local livestock and that of animal farms existing in the area varieties of colour were selected and through an inspired handling of some varying chromosome pigments six types of colour of the Caracul at Popăuți were obtained: black, light grey, brown, dark grey, pink and white. Each colour has several hues: black, black, dark grey, blue light grey, pearly light grey, mother-of-pearl light grey, silver



significant impact of vams from the USSR occurred in 1943.

Native to the droughty, hot Ukrainian steppes with its poor vegetation, the Caracul breed did not seem to have found the most favourable climatic conditions at Popăuți. The weather is colder and more humid here. But Caracul found here the laboratory of its people - born researchers and the sheep breeders in the region. They accepted the fact that the Caracul breed is a beautiful lamb. This is the reason for the fact that most Caracul sheep are to be found in the region. They accepted the fact that the Caracul breed is a beautiful lamb. This is the reason for the fact that most Caracul sheep are to be found in the region.

The influence of some of the Popăuți station covers: five counties: Iasi, Vaslui, Botosani, Bacau and Suceava. It provides animal breeders of this area with some 200 rams and ewes yearly, and 25,000 skins of Caracul sheep.

According to estimations, 90 per cent of Romanian country's stock of 600,000 sheep are half-breeds of various degrees of Caracul. The Caracul breed is the most valuable of the Caracul breed. It is the most valuable of the Caracul breed. It is the most valuable of the Caracul breed.

Specialists say that the Caracul of Popăuți is the most valuable of the Caracul breed. It is the most valuable of the Caracul breed. It is the most valuable of the Caracul breed.

QUADRUPLT CALVES

At the Măgurele farm of the Roșiori de Vode SAE, the cow numbered 85184 calved quadruplets at the end of last year. They are all females and develop normally. The mother is of the Holstein Friesian breed, a third-generation descendant of a cow born in Denmark and brought to Romania in 1976. The she-cow, No. 85184, had been artificially inseminated by the bull No. 10449 from Samir, Bucharest. Noteworthy is that in the Măgurele farm, cows are bred in pure breeds. At present, the stock of the farm number 911 heads, of which 854 are adult cows and the rest are lambs cows for reproduction. The average milk production obtained last year was of 5,500 litres for each cow.



Specialists say that the Caracul of Popăuți is the most valuable of the Caracul breed. It is the most valuable of the Caracul breed. It is the most valuable of the Caracul breed.

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ICE ELECTRONUM'S export programme includes the following lines of products:

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— Measuring and control apparatuses, of which ampermetres, voltmeters, wattmeters, electric metres, flow-metres, steam-flow metres, logometres are delivered to Poland, Syria, Iraq, Pakistan, Sudan, the GDR and Czechoslovakia.

— Automation elements, equipment and installations for all the economic and social sectors.

We shall enumerate some subgroups of products: field and panel automation equipment, distribution and control electrical equipment, automated equipment and systems controlling technological processes in all economic branches, transmission and data processing equipment,

ment, teletransmission and data processing equipment, machine tools, control equipment, automated testing equipment.

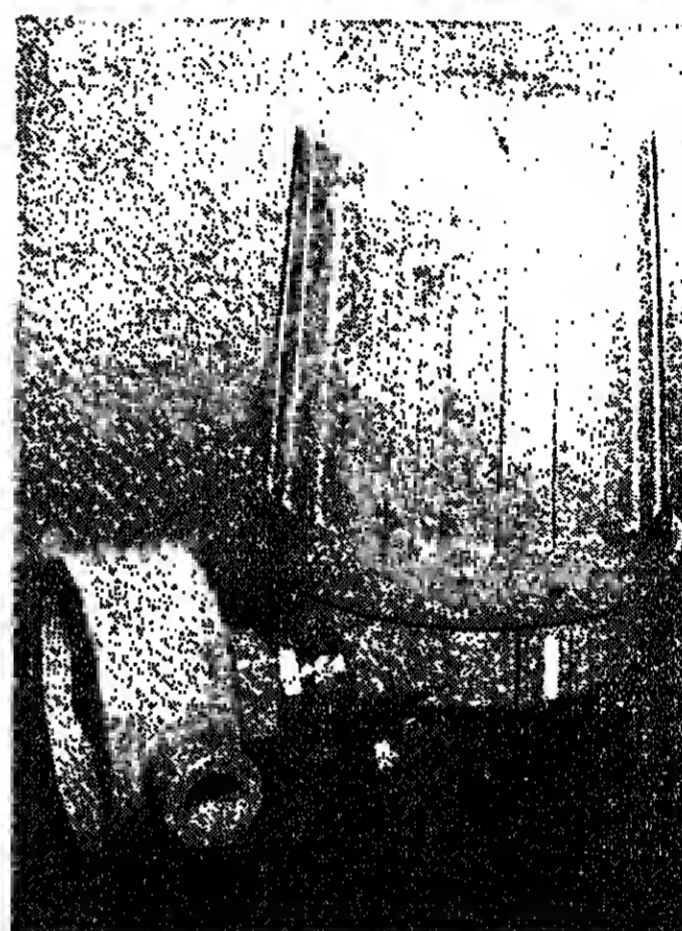
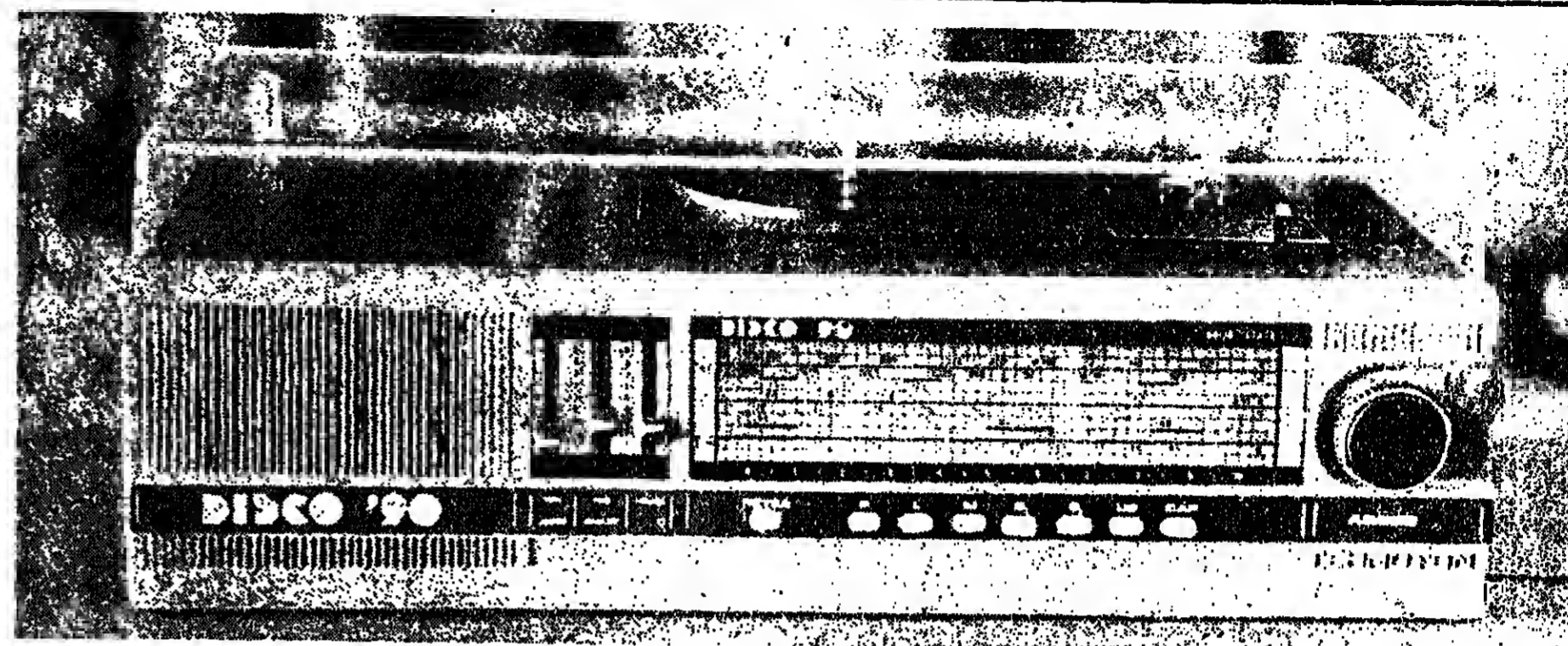
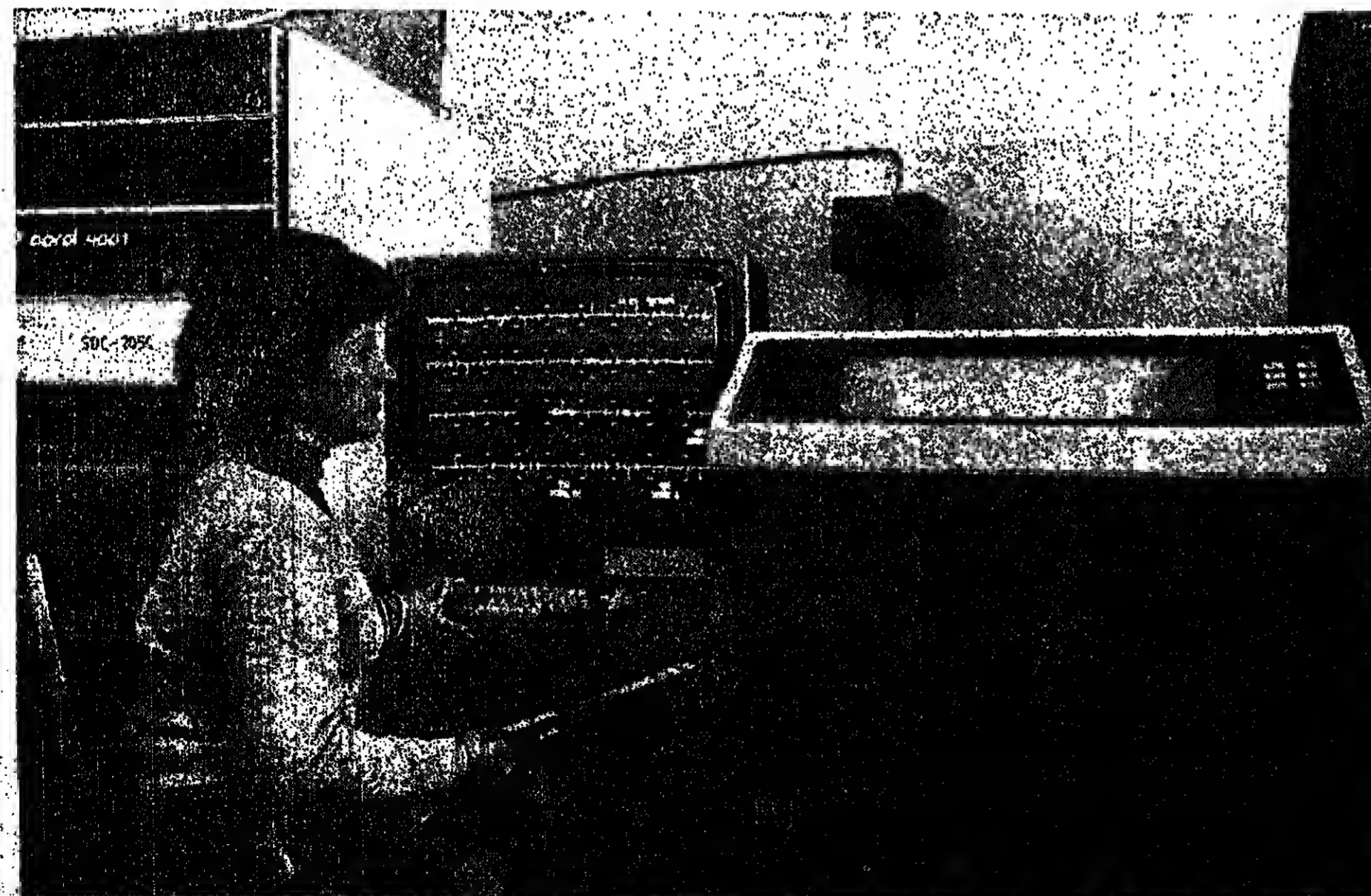
Also an offer are personal installations and equipment as well as turn-key deliveries. Increasing are the deliveries to countries such as the USSR, Egypt, the GDR, Czechoslovakia, Iran, Iraq, Bulgaria.

— Computer technology equipment such as: medium-capacity computers, minicomputers, microcomputers, personal computers, graphical systems, invoicing and bookkeeping machines, peripheral equipment. These products are exported to People's China, Czechoslovakia, the USSR, the GDR, Switzerland, Austria, West Germany, the USA.

The electronic components cover a wide range of diodes, transistors, integrated circuits, resistors, condensers, etc and are exported to Bulgaria, Czechoslovakia, the GDR, Poland, France, Italy, the United States etc.

Consumer goods such as radio receivers, radio cassette recorders and tv sets. These products are exported to countries such as West Germany, Britain, the Netherlands, Czechoslovakia, the GDR, the United States.

Also taking place through ICE ELECTRONUM are the export of licences and knowhow, the granting of technical assistance and software.



ICE ELECTRONUM imports a series of equipment, apparatuses, electronic components and various materials for the electronic industry and audio-video consumer goods.

An important partner in the export and import conducted by ICE ELECTRONUM is the Soviet Union.

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Supplied to the USSR are adjustable drives for machine tools, automatic telephone exchanges, computer technology, while that country exports to Romania electronic components, technological equipment

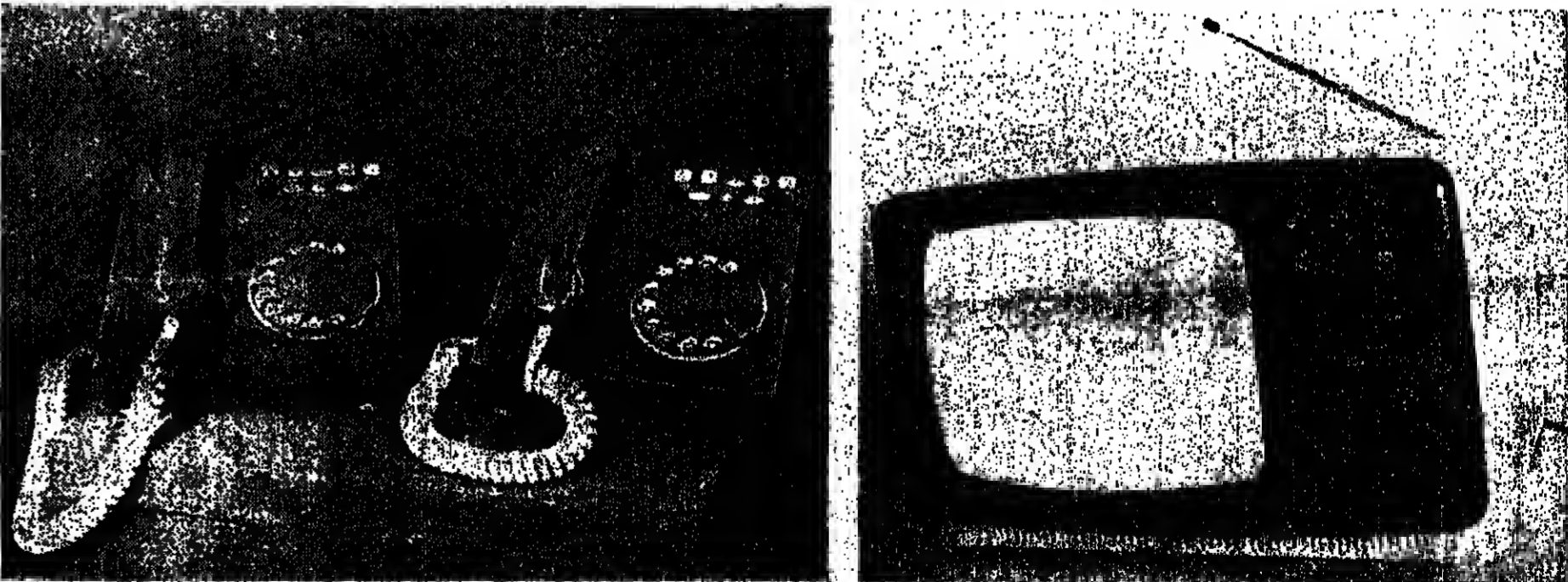
ment for the electronic industry, computer technology and audio-video consumer goods.

The collaboration with the Soviet foreign trade enterprises also accounts for the cooperation in production, that is Soviet electronic components are used in manufacturing electrical drives, computer technology equipment and automated telephone exchanges to be delivered to the USSR. At the same time very important is the ob-

servance of all delivery dates, especially as concerns the electronic components which are vital to the rhythmic realization of the equipment production plan.

According to annual mutual exchange protocol stipulations, the volume of the exchanges between ELECTRONUM and the Soviet foreign trade enterprises is set to grow every year.

For further information please contact our specialists.

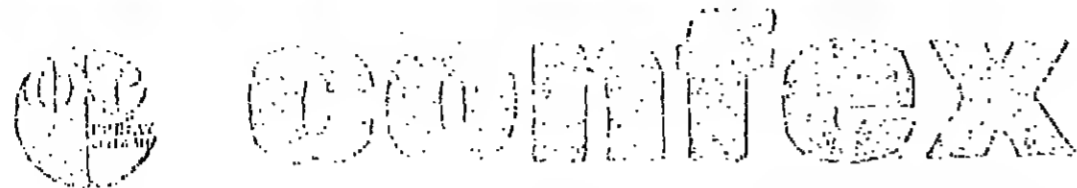


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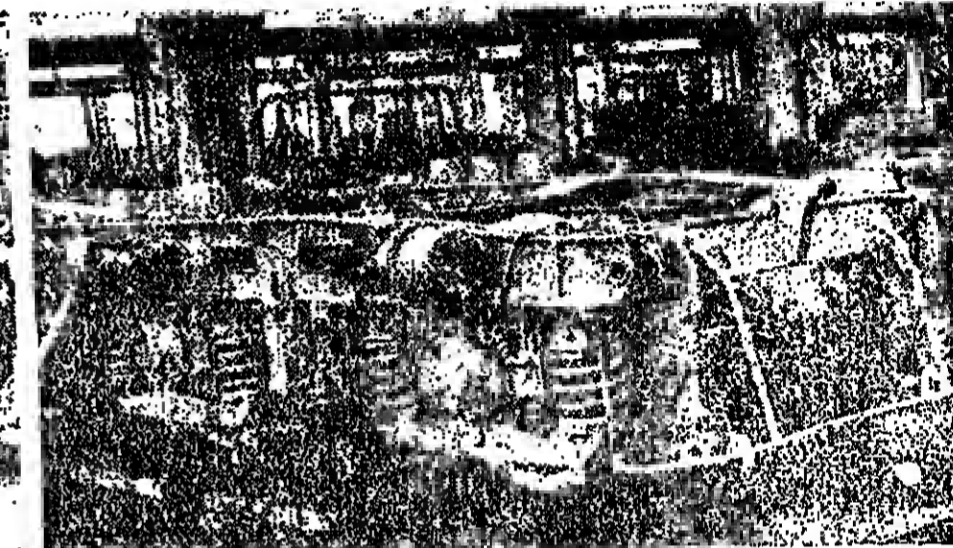
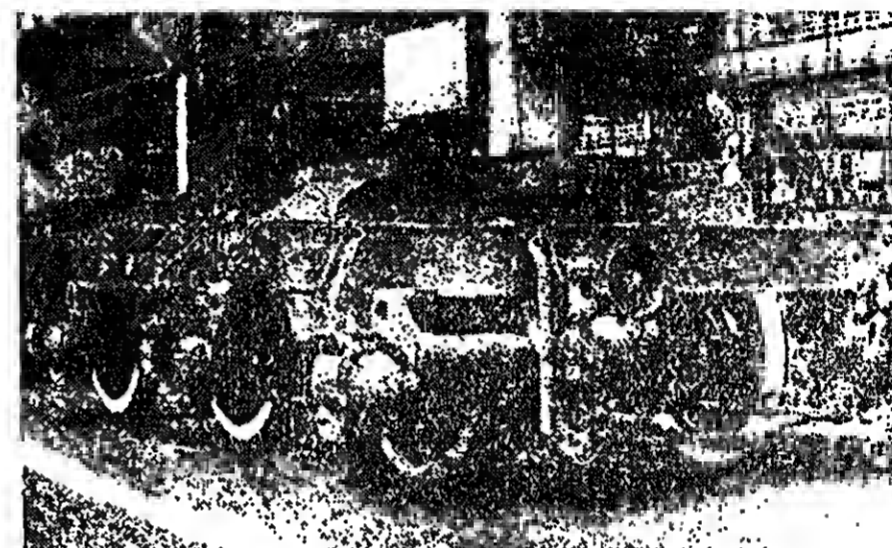
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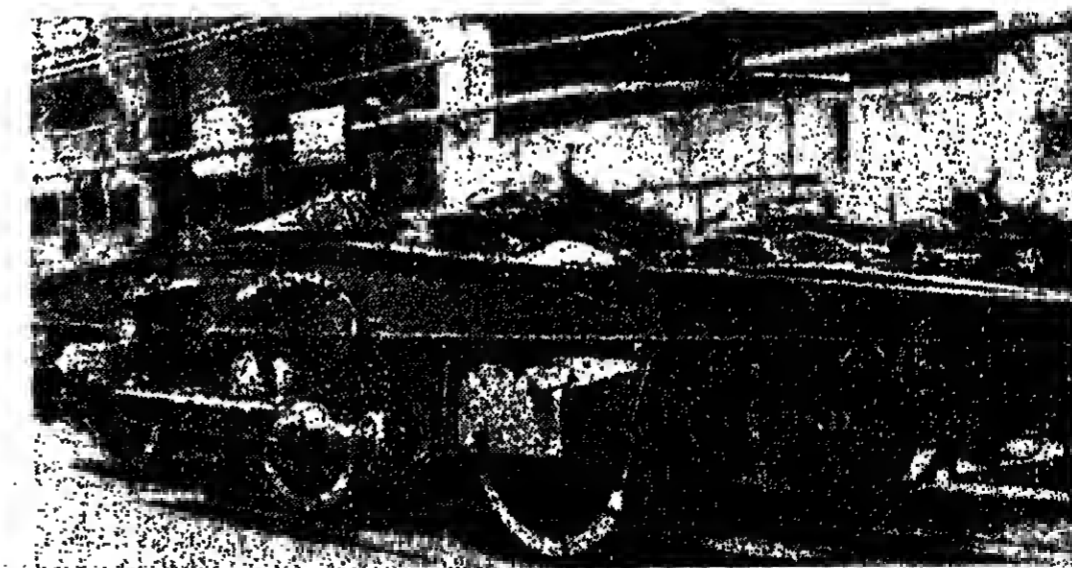
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